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A framework for Professional citizenship education based on knowledge management principles

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Abstract

Educational systems are responsible for sociability and prepare new generations for playing the role of citizenship in the local, national and global community. The basic question is how the new generation would be ready for the role of citizenship and which education approach can lead to it in knowledge age. This paper through review of literature and previous studies has been discussed the dimensions of professional citizenship education considering the knowledge management principles towards promoting social, human and intellectual capitals in educational system in Iran.

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1. Introduction

The complexity of global and interconnected problems is increasingly being recognized as an emergent phenomenon with non-linear dynamics and uncertainties that exist within highly political social contexts (Klein, 2004; Max –Neef, 2005; Gibbons, 1994). As Brodie, (2004) argues, current globalization entails processes that are multi-leveled and multi-directional. The processes of globalism reveal a shifting and breaking down of barriers of time, space, and nation, leading to a linking and enactment of a global community where there are at least possibilities of inclusive, transnational public spaces and transnational citizen-subjects. In conjunction with this,

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social, economic and political developments, such as international conventions that give people common rights and entitlements, have grown in number and variety.

Education premised upon this aspect of globalization has a purpose of creating more economically competitive citizens who are advantaged because of particular knowledge, skills and attitudes. Scholarly work in this area often refers to education as a core domain for building human capital (Porter et al, 2004). In this human capital approach, the emphasis is on students as future workers who must acquire the appropriate skills and knowledge to compete effectively in the world. In the increasingly interconnected global market, a descriptive knowledge about the world is beneficial to the individual working and competing in this context. The definition of a global citizen, within this construct, is a person who participates and reaps the benefits of this participation in a “borderless world”. Because this individual has the “human capital” to move freely across the world to access opportunities, he or she is able to compete with the ‘best’ in the world. Education for this type of citizen provides students with the necessary skills to participate successfully in the global market.

As well, it provides opportunities for international and cross-cultural experiences. Underpinning this notion of a competitive citizenry is the concept of economic rationality, in which people act in ways that maximize their economic advantage (Apple, 2000). Citizenship is also closely linked to processes of identity and participation. These relationships and processes serve to both reflect and challenge existing social contracts, binding citizens, including individuals, groups and communities, to each other. Lynn Davies (2006) suggests global citizenship education has grown out of the practice of global education, which had its focus in international awareness through participatory learning and engaging in holistic learning activities. She argues that adding citizenship into the concept reflects the shift towards a focus on human rights and responsibilities, implying a more active role that moves beyond an awareness of the issues. Held (1999) describes citizenship as primarily about the rights and obligations available to members of a state, but his description also includes the formal and informal relationships between individuals and the state.

Educating for global citizenship has become a shared goal of educators and educational institutions interested in expanding their own and their students’ understanding of what it means to claim or to have citizenship in the twenty-first century. The large and globally interconnected issues such as climate change, increasing intensity and extensity of poverty, and increased militarization, are to be addressed; we are challenged to create educational institutions that remain relevant to students as they find their place within this global context. As Shiel & McKenzie, (2008) in *The Global University: The Role of Senior Managers*, states, it may seem simpler to focus on the economic and competitive aspects of globalization and the local working contexts than to take a place in addressing the justice/injustice issues. However, educational systems are beginning to make explicit their commitments to accept there is a pivotal role for higher education in resolving the current and emergent global problems. Professional citizenship education has been suggested as a way in which educational systems can respond to the demand for opportunities to engage in relevant, meaningful activities that enhance students’ global, national and local perspectives and help them to contribute to a more peaceful, environmentally secure in knowledge age.

Therefore, through this networked environment, the individual knowledge & values gained by individual & school in globalized education can be disseminated, shared, further validated, refined and consolidated to be the local knowledge & values and human development in the global community. Effective individual learning occur in such a networked human & IT environment that can facilitate a higher level of intelligence and motivation of learners and provide the necessary social networks and foster, validate, accumulate and disseminate the various types of individual knowledge & values. Spivak, (2004) proposes the goals of education must be to learn to unlearn (for example, the colonial mentality), learn to listen, relearn with a global perspective, and learn to reach out and engage with those who we might consider “other”. However, in response to this complication, education has been called upon to prepare people for multiple and evolving forms of activity as citizens.

In addition, professional citizen need to change knowledge, vision and creative and initiative skills with the mental patterns and habits to applied in a different and varying world. The education and acquisition, creation, participation, organization, maintenance and application, and evaluation of knowledge performance are generated in order to enhance capacities in a quick, knowledgeable and continuous response to changes of the society and the world. Thus, application of the knowledge management pattern accompanied by creation and operation of knowledge in educational approaches can be a new way of responsiveness to all societal requirements. The fundamental skills required for professional citizen in this era of information and knowledge can be expressed as the following:

- Skills required for problem solution
- IT and communication skills

- Literacy of audio-visual mass media
- Mental and emotional skills
- The ability – know-how and know-where – to find relevant and up-to-date information
- The ability to identify, analyze, synthesize and evaluate connections and patterns
- The ability to contextualize and integrate information across different forms of information
- The ability to reconfigure, re-present and communicate information
- The ability to manage information (identify, analyze, organize, classify, assess, evaluate, etc.)
- The ability to distinguish between meaningful and irrelevant information for the specific task at hand or problem to be solved
- The ability to distinguish between valid alternate views and fundamentally flawed information.
- Sense making and chaos management
- Expanding current thinking patterns
- Analysis of information components in various methods and developing some new ties
- Recognizing the relationship between information components and developing new relations
- Selecting an appropriate compound of information and its application for problem solving in various conditions (Siemens, 2004).

2. Professional citizenship

In a traditional conception of citizenship education, the purpose was to produce loyal and dutiful citizens. As understandings of citizenship expand to address issues such as human rights, language, nationalism, globalization, equality, multiculturalism and pluralism, citizenship education is becoming more centres on the concept of inclusion and respect for diversity. More recently, citizenship education began explicitly recognizing the role of developing skills and processes. Strategies such as inquiry, literature studies and case studies develop the cognitive and critical-thinking skills associated with active and participatory citizenship.

A review of the literature on Citizenship education reveals that this aspect of education cannot be defined in isolation of international trends towards Citizenship education in pluralist, democratic societies. Citizenship education is highly topical in education in many countries and is concerned with preparing young people for the challenges associated with change in a globalizing world (Kerr, 2002a; 2003b; Jackson, 2007; Bertram-Troost & Miedema, 2009).

Kerr's (2002a) international review of Citizenship education provides a comprehensive overview of the factors that shape it, as well as interpretations of and approaches to it in school curricula. According to Kerr (2002a), Citizenship education should be broadly construed as encompassing the preparation of young people for their roles and responsibilities as citizens. Based on his review of Citizenship education in sixteen countries, Kerr (2002a: 5, 7) found that the aims, organization and structure of Citizenship education can be fully understood only by recognizing the role of context on its conceptualization (Kerr, 2003b). Kerr (2002a) identified historical tradition, geographical position, socio-political structure, economic system and global trends as the key influences on how Citizenship education is defined and approached in different countries. Moreover, a key factor to be considered in Citizenship education as a subject is the extent to which values and dispositions are articulated in the classroom. Kerr, (2002a & 2003b) contends that attempts to define and redefine citizenship and Citizenship education are associated with the rapid pace of change in the modern world and the common sets of challenges or issues that change has produced (Kerr 2002a & 2003b). Such challenges include cultural and religious diversity resulting from the movement of people within and across national boundaries and living in increasingly diverse communities and societies; the growing recognition of the rights of indigenous peoples and minorities; the changing roles of women in society; and an increasing global population resulting in the creation of new forms of community (Kerr, 2002a, 2003b). These challenges in turn touch on complex issues concerning pluralism, multiculturalism, ethnic and cultural heritage,

tolerance, social cohesion, collective and individual rights and responsibilities, social justice, consciousness of national identity, and freedom, among others (Kerr, 2002a).

Social realities such as those identified by Kerr require nation-states to rethink and redefine citizenship and citizenship education because pluralism raises questions concerning the rights and responsibilities of individuals and religious and/or cultural groups, including the rights to an education and the rights of people to maintain components of their community cultures (Banks, 2008 & Kerr, 2003b).

Although countries and communities have similar sets of national aims in dealing with these challenges and issues, including the aim of promoting citizenship and democratic values, they approach those aims in different ways. The education system becomes a powerful tool for maximizing learning “about”, “through” and “for” citizenship in a pluralist democracy and is therefore a vital part of the response to these challenges (Kerr, 2002a). In this case, we have shown the essential professional citizenship component on fig 1.

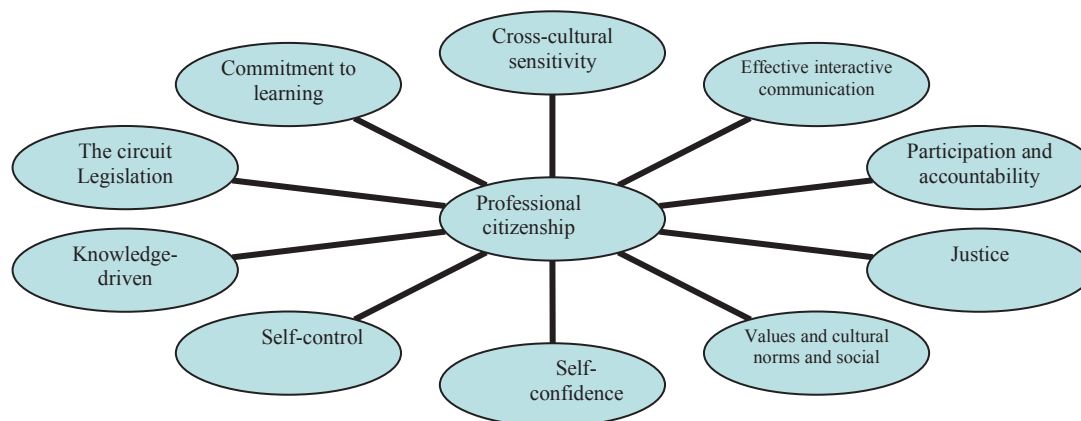


Figure 1. Component of professional citizenship

In our pluralistic knowledge age of increasing amounts of freely available information of unknown provenance, and ill-defined problems, which defy algorithmic solution, the intellectual capital of critical thinking is a necessary resource (Angeli and Valanides, 2009 & Zohar and Peled, 2008). Indeed, critical thinking is considered a crucial aspect of the competence, which citizens need to participate in daily life and society (Johnson, 2010 & Ten Dam and Volman, 2004). According review of literature; we have presented the potential characters of citizenship education on the table 1 and compared the tradition and active goals of citizenship education on table 2, 3 and 4.

Table 1. Character of citizenship education

The potential of character of citizenship education	How to teach for character of citizenship education
<ul style="list-style-type: none"> • A climate of respect for self and others • The attributes of active citizenship • Higher academic achievement • Improved interpersonal relationships • Greater self-discipline • Fewer behavioral problems • A continued focus on safe schools • A positive school culture • Enhanced employability skills 	<ul style="list-style-type: none"> • Personality traits or virtues such as responsibility and respect for others • Emotions such as guilt or sympathy • Social skills such as conflict management or effective communication • Behaviors such as sharing or helping, or • Cognitions such as belief in equality or problem-solving strategies

Table 2. The comparative of traditional & Active goals of citizenship education

The goal of traditional citizenship education	The goal of active citizenship education
<ul style="list-style-type: none"> • Provide opportunities and activities to maintain the status quo of social and political • arising from Install the values and beliefs and traditions • Community can provide students with an emphasis on promoting a sense of loyalty • Capture the social and political information • educating National language • promotion Insights of social discipline 	<ul style="list-style-type: none"> • Enhance students' knowledge and capabilities for active and responsible citizen education • Enhance • students' knowledge and research capacity • Promote critical thinking skills • Being able to get creative • Encourage students to play an active role in academic life at school and local community and in national and international • Familiar with their rights and responsibilities in school, community and national and international arenas • Encourage students to respect cultural differences, religious, ethnic and racist beliefs against • capture Knowledge and attitudes to maintain and improve environmental conditions • Encourage students in a supportive and social justice are concerned

Table 3. The curriculum elements of traditional & active approach of citizenship education

Curriculum elements	Aims	Content	Teaching methods	Evaluation
Approach				
active & modern	Improving knowledge, attitudes and skills, social and political Promote rational and critical thinking skills	Active Research axis Process	Active Partnership	Broad-based combination
Traditional & passive	Political commitment to the principles of induction Install values of citizenship, obedience and loyalty	Passive Transfer Empathic	Competitive Traditional	The criterion Subject oriented

Table 4. The comparative of passive & active citizenship education approach

Approaches/ Components	Active & Modern	Traditional & Passive
<ul style="list-style-type: none"> • How to define citizenship education • Given the level of interest and differences • Education News • Activity areas • How notice to the process • Focus attention • Training methods • levels of attention • Results and evaluation 	<ul style="list-style-type: none"> • Open and dynamic definition of citizenship education • Widespread • Citizenship Education • Partnership • Process-driven • The values attention • Interaction, active • Interpretation higher levels • More difficult to measure, the results of dynamic 	<ul style="list-style-type: none"> • The limited definition of citizenship education • Exclusive and Limited • Civic Education • Formal and structural • Content- driven • attention to knowledge • Explanation and one-way • Transportation, low levels • Results are limited and specific, measurable

3. Knowledge management principles

The academic institute is facing rapid change as a result of new demands for commercialization of knowledge, a need for a more efficient utilization of human resources due to cut-backs in basic funding, as well as the introduction of new accountability measures from government (Gibbons, 1994; Ziman, 2000; Jacob & Hellström, 2003). These changes sometimes result in new ways of working, for instance an increase in the prevalence of university-industry co-operation, increased dependence on external funding, teamwork and a concomitant need for inter-team learning.

In 1994, Gibbons described a growing shift in modes of knowledge production with “older homogenous modes of knowledge” replaced by complexity, hybridist, non-linearity, reflexivity, heterogeneity, and trans-disciplinarily. As Max-Neef, (2005), a Chilean scholar, identifies, current problems cannot be adequately understood from specific individual disciplines and universities. If there is to be significant movement toward addressing these problems, the complexity of analysis must be coherent with such problems.

“Knowledge management approach” which has just started to form itself in the globalizing world, that is getting smaller and smaller day by day, is one of the most prominent concepts to prepare and take the organizations and society to the future. It is known and apparent that there is a growing conscious and understanding of various types about knowledge, which emerge as “knowledge management”. According to Nonaka & Konno (1998), knowledge management is defined as a method for simplifying and improving the process of sharing, distributing, creating, and understanding company knowledge. Knowledge is considered as an asset, which has to be valued, developed, and managed (Bogdanowicz & Bailey, 2002; Quinn, J.B.,1992; Wiig, K.,1993; Nonaka, I. and Takeuchi, H.,1995; Amidon, D.M.,1997; Sietloff, C.G.,1999; Hansen, M.T., Nohira, N. & Tierney, T.,1999).

The knowledge management puts emphasis on creating values, is equal to responsibility, and makes the performance possible. It points to two aspects: knowledge operation and ability to create new knowledge. First aspect deals with providing information for the individual while he/she needs that information and the second aspect encompasses the acquisition, combination, distribution, application and creation of knowledge for improving organizational operations, which can provide a competitive privilege for that organization the involvement of both knowledge and creativity, are considered as two important aspects in knowledge application. Thus, it is necessary to deal with the individuals’ knowledge investments in higher education levels.

Boyer, (1990) classically argued that the work of the universities centers on four intellectual activities: discovery, teaching, application and integration, where discovery and teaching are traditional activities, while application refers to the development of new processes and products, and integration has to do with societal involvement, e.g. popularization, or co-operative engagement such as university-industry relations. Management of knowledge and intellectual capital is relevant for the traditional activities of discovery and teaching. However, the increasing emphasis on application and integration calls for new forms of academic management of intellectual capital and knowledge. Regarding the importance and necessity of learning in the new millennium in which, learning process is not important lonely, but it is important for creating new knowledge and innovating.

The optimized strategic knowledge management is for the purpose of education, which makes use of a chain pattern and mass participation groupware, and applies intellectual assets by flourishing potential talents of the

students and directions of the teacher. This path of knowledge build-up, build-up of recognition, and development and maintenance of the students' knowledge is being considered. Asset of knowledge the classroom might be achieved during having conversations and thinking as the students are learning, practicing jobs, speaking, writing or adding to all these are acquiring knowledge and establishing relationship in order to improve productivity'. The key to recognize knowledge asset at the classroom is the identification of the knowledge output, which means improvement of teaching-learning process of the students. We specify the principles of knowledge management in an educational organization, like school and class, as follow:

- Compiling specific ways for achieving knowledge spontaneous generation interchanges
- Giving updated knowledge and information to students
- Establishing a space for students to think free and for self expression
- Applying students' intellectual assets
- Enhancing knowledge transfer speed
- Providing an environment for student to create and innovate and developing grounds for creation and innovation
- Giving the ability to students for being adapted with the environment and conditions of the society
- Providing conditions and an environment for developing and processing information and knowledge fluency
- Providing some conditions by which the individuals tend to apply their knowledge and share and exchange it with others
- Encouraging and supporting the teamwork and establishing systems, on the basis of which the synergic point of view of thought and action coordinated with common feeling
- Establishing effective communication between students and exchanging information, knowledge and technology by the teacher's guidance to support and justify resource allocation
- Interacting between teacher and students for expanding their knowledge, insight and skills in order to being able and establishing the teams
- Grading the environment for software movement and generating the science in society and creating technologic infrastructures in teaching with computational networks
- Being prepared the school authorities for responding and resolving the problems with new solutions
- Changing the role of teacher into leader, instructor, helper, inspiring person, and encouraging person who evaluates the processes on the basis of measuring the operation
- identify and enable disciplinary identity and work
- Creating the atmosphere for liberal thinking and self-expression
- Enabling compatibility with atmosphere and conditions of the society
- Providing conditions and grounds of data development and processing and the knowledge integration
- Creating prompt conditions for motivating individuals to apply their own knowledge or sharing or exchanging it with the others.
- Developing some group enhancement-based systems resulting from harmony between thinking, practicing and common feelings
- Maintaining relations, interactions and exchange of information, knowledge and effective technology among the students
- Interaction for developing knowledge, vision, skills and enabling and team building
- Paving the way for software movement and producing knowledge in the society and developing technological infrastructure for training with computer networks
- Preparation of the school authorities for accountability and problem solving by making use of new solutions
- Changing teachers' roles into leading, training, helping, inspiring, encouraging and practice oriented people who are continuously evaluating processes based on measuring performance.

4. A framework for professional citizenship education based on knowledge management principles

From the framework of analytical review (fig. 2) to the comparative study of citizenship education and knowledge management, have been addressed the relation between particular components. These include comparing elements of curriculum and knowledge management principles with its various levels in local, national and global world. Following the framework, itself would be used as a pictorial representation to contrast the existence of, opportunities for and absence of elements of critical citizenship within the various levels of a curriculum.

With professional citizenship elements drew particularly concerning active citizenship education approach. We can promote regulative development, self-knowledge, collective/social values with discovering implications for self-understanding from their reading; generalizing from the module's accountability requirements to monitor and regulate their study behaviors; developing intellectual curiosity; searching for evidence to justify a particular position; qualifying the certainty of their knowledge/understanding; examining and reconciling alternative viewpoints.

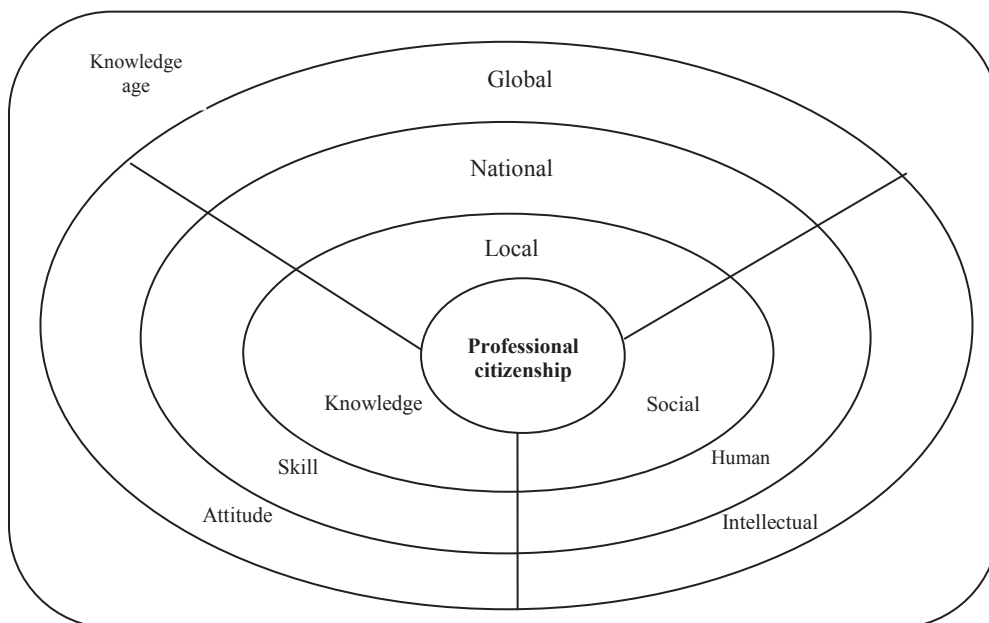


Figure 2. Professional citizenship education based on knowledge management principles

5. Conclusion

Developing the hierarchy of knowledge management can be a rational way for applying teaching and learning in this age. The knowledge based society need organizations with knowledge creating process, and educational systems should be the leader of innovation in knowledge management as the basic ability. While the official citizenship curriculum may be defined by the prevailing national political agenda and its socio-cultural context, it may still contain spaces that might be used by critical pedagogues to promote a strong ideological agenda. By mapping out the manifestations of these spaces onto a framework of professional citizenship, educators may promote and enhance their programs and practice in order to achieve a true professional pedagogy based on knowledge management principles to emancipate and transform students and schools towards a better society.

Educational systems of knowledge management strategies at the local level, national and global citizenship education can play a role. At the local level, the educational system flourishes the intellectual capital in science education, foster citizenship. Intellectual capital means the ability to acquire knowledge and knowledge creation. Its main affect is giving the human soul the ability, which causes self-confidence, self-expression, taking votes and meaningful participation, political vision and being informed of the individual rights and improving literacy. Having access to knowledge leads to being knowledgeable and that, in turn, leads to individuals being capable in their relations with society, the globe and themselves.

At the national level, education is the cause of expedition national values and culture development. Since national boundaries should not prevent the effects of global changes in the orientation, education and intellectual capital is an obligation investment in the knowledge world.

Role in the three dimensions of local, national and global knowledge creation and the mission, meet the educational system is essential. Thus, the pattern of knowledge management, learning and knowledge creation is important for training non-formal Conscious efforts to contribute towards the educational needs and experiences of individuals within the schools for professional citizenship. Teachers should be able to help students to get the knowledge, skills and abilities needed, schools should be developed scientific thinking and knowledge creation in citizenship education because using only non-formal education in the educational system would not be possible. Therefore, regarding the results of this research in the available condition, emphasizing on the organizing knowledge is specified as the inflexible regulations of educational systems. In the desirable condition, being high the average of applying knowledge suggested that knowledge management, emphasizing the knowledge application leads students to predict, hypothesis, and use the educational concepts in new conditions to promote citizenship education.

Using the principles of knowledge management, with knowing the teaching patterns, based on researches, and teaching learning skills to students, the students can learn more wisely. Success in educational approaches like other programs requires providing an appropriate environment for change. The roles of teachers are important as the basic factor in changing, because creating insight in teachers about the changes can creates environment for expanding the educational system.

Recognition and application of new tools and facilities in the area of teaching-learning lessons and application of new communicative tools, and establishing relations with the society are basic grounds for development. The need to be dynamic in knowledge-based society and its fulfilment requires the presence of organizations, which have knowledge-creation and knowledge-application procedures. Among these, the educational systems should pioneer in establishing a knowledge management initiative. We would be hope this case would be:

- *a transmission approach*, which focuses on the knowledge content of citizenship education. It is instructional in style, predictable in intent and focused in its methodologies, and inflexible in program design
- *a process approach*, which focuses mainly on the context of schooling and the ways in which schooling is organized – developmental in style, unpredictable in intent, varied in methodologies and flexible in program design
- *a transformational professional approach*, which is concerned with the re- professionalization of teachers as facilitators of learning and focused on learning as a process for transforming society – based on the teacher as a primary agent of social change, developed in a community context, adaptable to widely changing circumstances, and flexible in program design.

References

- Amidon, D., M. (1997). *Innovation Strategy for the Knowledge Economy: The Ken Awakening*. Utterworth-Heinemann, Stoneham, MA.
- Angeli, C., & Valanides, N. (2009). Instructional effects on critical thinking: Performance on ill-defined issues. *Learning and Instruction*, 19, 322–334.
- Apple, M., W. (2000). Can critical pedagogies interrupt rightist policies?. *Educational Theory*, 50:2 , 229-254.
- Banks, J., A. (2008). Diversity group identify, and citizenship education in a global age. *Educational Researcher*, Vol. 37. No.3.
- Bogdanowicz & Bailey. (2002), Quinn, J., B. (1992). *Intelligent Enterprise: A Knowledge- and Service- Based Paradigm for Industry*.
- Boyer, E., L. (1990). *Scholarship Reconsidered: Priorities of the Professoriate*. Carnegie Foundation.
- Brodie, J. (2004). Introduction; Globalization and Citizenship Beyond the National State. *Citizenship Studies*, 8(4). 323-332.
- Davies, L. (2006). Global citizenship; abstraction or framework for action? *Educational Review*, 58(1), 5-25.
- Gibbon, M. (1994). *The new production of knowledge: The dynamics of science and research in contemporary societies*. London: Sage.
- Hansen, M.T., Nohira, N. & Tierney, T. (1999). What is your strategy for managing. *Journal of Knowledge Management*, Vol. 5 No. 1, pp. 8-18.
- Held, D. (1999). The transformation of political community: Rethinking democracy in the context of globalization. In Shapiro, I & Hacjero-cordon (Eds.) *Democracy's Edges*. Cambridge: Cambridge University Press.

- Shiel, C., & McKenzie, A. (2008). Introduction. In C. Shiel & A. McKenzie, (Eds.), *The Global University: the role of senior managers* (5-9). London: DEA River House.
- Jackson, R. (2007). European institutions and the contribution of studies of religious diversity to education for democratic citizenship. In R Jackson, S Miedema, W Weisse, J-P Willaime (eds.), *Religion and education in Europe. Developments, contexts and debates*. Münster: Waxmann: 27-55.
- Jacob, M., & Hellström, T. (Eds) (2003). *The Future Knowledge Production in the Academy*. Buckingham: Open University Press.
- Kerr, D. (2002a). Citizenship education in the curriculum: an international review. *The School Field*, 10(3/4): 5-31.
- Kerr, D. (2003b). Citizenship education in England: The making of a new subject. [online]
<http://www.sowi-onlinejournal.de/2003-2/index.html>. Retrieved June 2009 (10 pages).
- Klein, J., T. (2004). Prospects for transdisciplinarity. *Futures*, 36(4). 515 – 526.
- Max, N., M. (2005). Foundations of transdisciplinarity. *Ecological Economics*, 53.5-16.
- Bertram-Troost, G. D., & Miedema, S. (2009). Semantic differences in international comparative research on religious education. An EC-funded project as example. *Panorama*, 21, 133-147.
- Nonaka, I., & Takeuchi, H. (1995). *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York, NY: Oxford University Press.
- Porter, M. E., Ketels, C. H. M., Miller, K & Bryden, R. T. (2004). *Competitiveness in Rural U.S. Regions: Learning and Research Agenda*. Institute for Strategy and Competitiveness, Harvard Business School, Cambridge, MA.
- Sieloff, C., G. (1999). If only HP knew what HP knows: the roots of knowledge management. available at: www.sveiby.com.au/knowledgemanagement.html.
- Siemens, G. (2004). Connectivism: a learning theory for the digital age. Available from E-Learn space at: www.elearnspace.org/Articles/connectivism.htm.
- Spivak, G. (2004). Righting wrongs. *The South Atlantic Quarterly*, 103(2/3). 523-581.
- Ten Dam, G., & Volman, M. (2004). Critical thinking as a citizenship competence: teaching strategies. *Learning and Instruction*, 14, 359–379.
- Wiig, K. (1993). *Knowledge Management Foundations*. Schema Press, Arlington, TX.
- Zohar, A., & Peled, B. (2008). The effects of explicit teaching of meta- strategic knowledge on low- and high achieving.